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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/430,437	10/29/1999	JAYANTA KUMAR DEY	99-849	7301

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EXAMINER

YUAN, ALMARI ROMERO

ART UNIT	PAPER NUMBER
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2176

DATE MAILED: 12/30/2003

11

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/430,437

Applicant(s)

DEY ET AL.

Examiner

Almari Yuan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This action is responsive to communications: Amendment filed on 10/10/03.
2. The rejection of claims 22-23 and 48-49 under nonstatutory double patenting rejection has been withdrawn based on Applicant's remarks on page 11 of the Amendment filed on 10/10/03.
3. Claims 1-52 are pending in the case. Claims 1 and 27 are independent claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-7, 18-19, 27-33, and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 5,708,845 to Wistendahl et al., issued January 13, 1998, in view of U.S. Patent Number 6,311,178 B1 to Bi et al., issued October 30, 2001, filed September 9, 1998 and U.S. Patent Number 4,845,697 to Giddings, issued July 4, 1989, filed November 27, 1987.**

With respect to the rejection of each dependent claim below, the preceding rejection(s) of the relevant base claim(s) is incorporated therein.

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Regarding independent claims 1 and 27, Wistendahl et al. teach (a) in response to a signal of interest at a particular time during the temporal document, identifying a portion of the temporal document for which related documents are to be found and (b) selecting text associated with the portion of the temporal document identified. (Wistendahl et al., col. 7, lines 55-59.)

Further, Wistendahl et al. do not teach (c) weighting each term in the selected text by a function $W(t)$ according to the time t at which the term occurs relative to the time at which the signal of interest occurs and (d) finding the related documents by use of information retrieval techniques as applied to the weighted terms.

However, Bi et al. teach weighting search terms and further teach that this step provides the benefit of giving users search results with which they are more likely to be satisfied. (Bi et al., col. 2, lines 38-48.) Moreover, Giddings would have suggested to one of ordinary skill in the art combining and extending Wistendahl et al. and Bi et al. to use a function $W(t)$ according to the time t at which the term occurs relative to the time at which the signal of interest occurs inasmuch as Giddings teaches a technique for searching video data in which, upon a failure to find a predetermined frame, a search is conducted back and forth of successive frames surrounding the given frame for a given time period. (Giddings, col. 5, lines 27-42.)

One of ordinary skill in the art would have been further motivated to implement a function $W(t)$ by the recognition that a search result close in time to the signal of interest would have been more likely to have been relevant. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have combined Wistendahl et al., Bi et al., and Giddings to weight each term in the selected text by a function $W(t)$ according to the time t

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at which the term occurs relative to the time at which the signal of interest occurs and (d) find the related documents by use of information retrieval techniques as applied to the weighted terms.

Regarding dependent claims 2 and 28, Wistendahl et al. teach that the temporal document is video and audio material inasmuch as they teach a movie with audio and video components. (Wistendahl et al., col. 7, lines 55-56.)

Regarding dependent claims 3 and 29, Wistendahl et al. teach that the video material is stored on a video server inasmuch as this element is inherent in the teaching of large digital libraries transmitted to subscribers. (Wistendahl et al., col. 6, line, 58, col. 7, line 6.)

Regarding dependent claims 4 and 30, Wistendahl et al. do not explicitly teach applying speech recognition techniques to the audio component of the identified temporal document. However, Logan et al. suggest this step inasmuch as they teach searching a collateral text file (Logan et al., col. 39, lines 10-14) and also teach voice input to navigate program files. (Logan et al., Abstract.) Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have applied speech recognition techniques to the audio component of the identified temporal document.

Regarding dependent claims 5 and 31, Wistendahl et al. teach pop-up movie trivia, which is the equivalent of close-captioned text. (Wistendahl et al., col. 7, lines 55-59.)

Regarding dependent claims 6 and 32, Wistendahl et al. teach the temporal document including text as discussed above regarding claims 5 and 31.

Regarding dependent claims 7 and 33, Wistendahl et al. teach that the document text varies with time and the selected text is that portion of the temporal document identified. (Wistendahl et al., col. 7, lines 53-59.)

Regarding dependent claims 18 and 44, Wistendahl et al. teach accessing related documents through the Internet. (Wistendahl et al., col. 5, lines 14-15.)

Regarding dependent claims 19 and 45, Wistendahl et al. teach selecting the related documents from among a collection of documents which may be accessed through the Internet. (Wistendahl et al., col. 5, lines 14-15; col. 8, lines 66-67.) Wistendahl et al. do not explicitly teach utilizing databases comprising information about the collection but it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize such databases because it was well known in the art that databases were the most common devices in which collections of information were stored and one of ordinary skill in the art would have recognized that utilizing a database to select documents was an efficient and reliable way of doing so.

6. **Claims 8-14 and 34-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wistendahl et al. in view of Bi et al. and Giddings and further in view of U.S. Patent Number 6,199,076 B 1 to Logan et al., issued March 6, 2001, filed October 2, 1996.**

Regarding dependent claims 8 and 34, Wistendahl et al. does not teach the document text including news bulletins, weather, sports scores, or stock information. However, Logan et al. suggest extending Wistendahl et al. to include such a step inasmuch as they teach that there is a need to be able to search through news, weather, and business data. (Logan et al., col. 1, line 10 - col. 2, line 3.)

Regarding dependent claims 9 and 35, Wistendahl et al. do not teach that $W(t)$ is equal for all times between t_1 before the signal of interest is given and t_2 before the signal of interest and zero for all other times. However, Logan et al. teach searching a program segment in which $W(t)$ is

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equal for all times between t_i before the signal of interest is given and t_2 before the signal of interest and zero for all other times. (Logan et al., col. 39, lines 10-19.) Moreover, one of ordinary skill in the art would have recognized that a user might want to search within a given time frame only and not without it. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have specified that $W(t)$ is equal for all times between t_i before the signal of interest is given and t_2 before the signal of interest and zero for all other times.

Regarding dependent claims 10 and 36, Wistendahl et al. do not explicitly teach that t_i is 2 seconds and t_2 is 30 seconds. However, Wistendahl et al. do teach that the concept of setting time intervals during video display was known in the art. (Wistendahl et al., col. 5, lines 23-28.) Moreover, one of ordinary skill in the art at the time of the invention would have recognized that the interval within a search was done should start a few seconds, i.e., 2 seconds before the signal of interest was received to account for the user's reaction time and that the search should go a certain amount back in time, i. e., 30 seconds.

Regarding dependent claims 11 and 37, Wistendahl et al. do not teach that $W(t)$ is equal for all times between t_i before the signal of interest is given and t_2 before the signal of interest and decreases from t_i until the time of the signal, and increases from a time t_3 before the signal is given to the time t_2 , and is zero for all other times. Regarding the recitation that $W(t)$ is equal for all times between t_i before the signal of interest is given and t_2 before the signal of interest, the rejection of claims 9 and 35 above is fully incorporated herein.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to decrease $W(t)$ from t_i until the time of the signal because one of ordinary skill in the

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art would have recognized that the closer in time to the signal of interest the more likely it was that elapsed time was due only to a user's reaction time and not to interest in the elapsed material.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to decrease $W(t)$ from t_2 until t_3 because one of ordinary skill in the art would have recognized that, up to a certain point, as the time got closer to the time when the signal of interest was expressed, it would be more likely that time period contained the subject matter in which the user was interested.

Regarding dependent claims 12 and 38, Wistendahl et al. do not explicitly teach that t_1 is 2 seconds and t_2 is 15 seconds, and t_3 is 30 seconds. However, Wistendahl et al. do teach that the concept of setting time intervals during video display was known in the art. (Wistendahl et al., col. 5, lines 23-28.) Moreover, one of ordinary skill in the art at the time of the invention would have recognized that the interval within a search was done should start a few seconds, i.e., 2 seconds before the signal of interest was received to account for the user's reaction time and that the search should go a certain amount back in time, i.e., 30 seconds, and also that there would be a certain point, i.e., 15 seconds, within the 30 seconds at which the likelihood of finding relevant subject matter would begin to diminish.

Regarding dependent claims 13 and 39, Wistendahl et al. does not disclose $W(t)$ behaving linearly, but it would have been obvious to one of ordinary skill in the art at the time of the invention to have it do so because one of ordinary skill in the art would have recognized that the likelihood of finding relevant search results would most likely increase or decrease linearly with time.

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Regarding dependent claims 14 and 40, the rejection of claims 12 and 38 above is fully incorporated herein.

7. **Claims 20-21, 24-25, and 46-47, and 50-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wistendahl et al., Bi et al., and Giddings as applied to claims 19 and 45 above, and further in view of U.S. Patent Number 6,182,065 B1 to Yeomans, issued January 30, 2001, filed April 22, 1998.**

Regarding dependent claims 20 and 46, Wistendahl et al. do not teach selecting related documents according to scores achieved according to a formula depending on the occurrence of terms which occur in text associated with the portion of the temporal document identified, where each term is weighted by a function $W(t)$ according to the time t at which the term occurs relative to the time at which the signal of interest occurs.

However, Yeomans teaches weighting search results according to their predicted relevance. (Yeomans, col. 4, lines 60-62.) One of ordinary skill in the art would have recognized that weighting allowed users to see more relevant search results, and would also have recognized that search results may have been more or less relevant according to where they occurred in time. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the steps recited in claims 20 and 46.

Regarding dependent claims 21 and 47, Wistendahl et al. do not teach, but it would have been obvious to one of ordinary skill in the art to implement, selecting a predetermined number of documents, 1000, because it was well known in the art to limit search results to a predetermined number and one of ordinary skill in the art at the time of the invention would have recognized

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that this provided the benefit of not overwhelming the user, and moreover would have recognized that 1,000 documents was an upper limit of the number of documents that could comfortably be retrieved.

Regarding dependent claims 24 and 50, Wistendahl et al. do not teach, but it would have been obvious to one of ordinary skill in the art to implement, the step of using terms in portions of the document other than the identified portion in calculating scores because one of ordinary skill in the art at the time of the invention would have recognized that such terms could have a bearing on whether the document was relevant to the user's signal of interest.

Regarding dependent claims 25 and 51, Wistendahl et al. do not teach, but it would have been obvious to one of ordinary skill in the art to implement, the step of having the determination of documents receiving the highest scores carried out using compressed document surrogates because one of ordinary skill in the art at the time of the invention would have recognized that working with compressed document surrogates would have been more efficient than working with the full document.

8. **Claims 22-23 and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wistendahl et al., Bi et al., Giddings, and Yeomans as applied to claims 20 and 46 above, and further in view of S.E. Robertson et al., "Some Simple Effective Approximations to the 2Poisson Model for Probabilistic Weighted Retrieval," Proceedings of the 17th Annual International ACM SIGIR Conference on Research and Development in Information Retrieval (1994), pages 232-241 (hereinafter "Robertson").**

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Regarding dependent claims 22-23 and 48-49, Wistendahl et al. does not teach using Robertson's Term Frequency to provide a score to a document in a collection. However, Robertson teaches use of probabilistic models with variables comprising within-document, term frequency, document length, and within-query term frequency, and states that the method taught provides considerable performance improvements. (Robertson, Abstract, page 232.) Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have implemented the steps recited.

Allowable Subject Matter

9. **Claims 15-17, 26, 41-43, and 52** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

A statement of reasons for the indication of allowable subject matter was given in the previous action mailed on 3/17/03.

Response to Arguments

10. Applicant's arguments filed 10/10/03 have been fully considered but they are not persuasive.

Regarding Applicant's remarks on pages 12-13:

Applicant argues that Giddings does not teach "time at which a search term occurs" and wherein Applicant's independent claims 1 and 27 the "search term" in Giddings are the numeric track identifiers. However, Applicant's independent claims 1 and 27 do not explicitly disclose

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the feature "search term" and only discloses the claimed feature "term". Therefore, Applicant's argument is not commensurate with the claimed invention.

Giddings does disclose "a function $W(t)$ according to the time t at which the term occurs relative to the time at which the signal of interest occurs", on col. 5, lines 27-42 teaches a technique for searching video data in which, upon a failure to find a predetermined frame, a search is conducted back and forth of successive frames surrounding the given frame for a given time period, in other words, performing a search for a frame number within a prescribed distance from the originally selected frame number is found.

Furthermore, Giddings on col. 13, line 50 – col. 14, lines 18 and col. 16, lines 1-22 teaches searching for a track number that matches the time position of the initial target track number (the time at which the term occurs).

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almari Yuan whose telephone number is (703) 305-5945. The examiner can normally be reached on Mondays - Fridays (8:30am - 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (703) 305-9792. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

AY
December 28, 2003


JOSEPH H. FEILD
PRIMARY EXAMINER